

REMARKS

Upon receipt of this response, the Examiner is respectfully requested to contact the undersigned representative of the Applicant to arrange a telephone interview concerning the inventive merits of this application.

The Applicant thanks the Examiner for making DE 102 03 633 of record in this case.

In the Advisory Action of July 16, 2009, the Examiner indicates that the specification does not disclose how the rocker elements are attached on individual rotatable axles and where these axles are in relation to the rest of the device. In response, the Applicant respectfully submits that, as clearly shown in Fig. 1, the rocker element 8 are pivotably supported on an exterior surface of the roller 7 within one of the respective grooves G, in which a respective gear shift fingers F travels, by a pivot axle 6 which forms a pivot axis for the associated rocker element 8.

As can be seen in Fig. 1, the pivot axle or axis 6 extends generally traverse with respect to a longitudinal direction of the rocker element 8 and normal to the groove G within which the shift finger F travels (see attached exploded view of a section of Fig. 1). In addition, as can be seen in Figure 1 and shown in solid lines in Exhibit A attached hereto, each respective spring 9 is located between an undersurface of the rocker element 8 and on an adjacent outwardly facing surface of the roller 7 so that the spring 9 biases the shorter end, i.e., the wedge-shaped tip 10, 11, 12, 13 or 14, of the rocker element 8, away from the roller 7, about the pivot axle 6, while pivoting the opposite longer end of the rocker element 8, i.e., the wedge-shaped tip 1, 2, 3, 4 or 5, toward the roller 7 (see dashed in lines of the rocker element in exhibit A attached hereto which diagrammatically shows such pivoting arrangement).

As a result of this disclosed arrangement, the shorter end, i.e., wedge-shaped tip 10, 11, 13 or 14, of the rocker element 18 is normally biased radially outward away from the roller 7 so as to be positioned to interact with the associated shift finger F while the longer end, i.e., wedge-shaped tip 1, 2, 3, 4 or 5, of the rocker element is normally biased toward the roller 7 so as not to be positioned to interact with the associated shift finger F.

However, in the event that the roller 7 is rotated at a sufficiently rapid speed such that the centrifugal force, acting on the rocker elements 8, causes the longer ends of the rocker elements, i.e., the wedge-shaped tip 1, 2, 3, 4 or 5, to pivot about the respective axles 6 toward the adjacent surface of the roller 7 thereby compressing the respective springs 9 (see Exhibit b attached hereto), located between the undersurface of the rocker elements 8 and the

outwardly facing surface of the roller 7, the longer end, i.e., wedge-shaped tip 1, 2, 3, 4 or 5, of the rocker elements 8 are now able to interact with the associated shift finger F.

As is apparent from the above, spring elements 9 is merely sandwiched between the undersurface of the rocker element 8 and the outwardly facing surface of the roller 7, in a slightly compressed state, so that the spring 9 is normally captively retained by its compressive state. If desired, either the the rocker element 8 and/or the roller 7 may have some sort of retaining mechanism, e.g., such as a recess, a post, etc., which assists with captively retaining the spring 9 in position between the rocker element 8 and the roller 7.

The Applicant respectfully submits that such pivoting action and compression of the spring 9 is readily apparent from Fig. 1 but, if desirable, the Applicant is willing to enter one or more diagrammatic representations showing such pivoting movement of the rocking element 8 in the event that the Examiner believes that the same will assist with a more complete understanding of the invention.

In the outstanding official action, the drawings are objected to for the reasons noted in the official action, e.g., failing to show the structural details including the connections between the components and the arrangement. All of the raised drawing objections are believed to be overcome by the requested drawing amendments, namely, the cancellation of new Fig. 2 and the above requested drawing amendments to Fig. 1 to show diagrammatically the respective selector finger F, F', F'', F''' engaged with each one of the grooves G, G', G'', G''' and the rotational axis A of the shifting roll 7. It is respectfully submitted that no new matter is entered by the same since the originally filed application papers provide ample support for all of the entered drawing amendments. The accompanying new Replacement Sheet of formal drawing incorporates all of the requested drawing amendments. If any further amendment to the drawings is believed necessary, the Examiner is invited to contact the undersigned representative of the Applicant to discuss the same.

With respect to the rejection of the specification, under 35 U.S.C. 132(a), because it introduces new matter into the disclosure, the Applicant respectfully responds as follows. As can be seen in Fig. 1, the rotational axis 6 *of each rocker element 8* (highlighted in yellow in the enclosed copy of Fig. 1 marked as Exhibit A) is arranged perpendicular or normal to the corresponding groove G, G', G'', G''' in which the selector finger F, F', F'', F''' is guided (highlighted in pink in Exhibit A) as shown in Fig. 1 and not "parallel" as incorrect described in the first sentence of original paragraph [033] of the specification. In order to clarify the

disclosure of the pending specification, in the Substitute Specification, the term "axle" was replaced with the term "axis" and the term "parallel" was replaced with the term "perpendicular" which are both more accurate.

In view of the above clarification, the Applicant respectfully submits that the new matter rejection, under 35 U.S.C. 132(a), is addressed and overcome by the above clarification and the raised rejection be withdrawn at this time. If required, however, the Applicant is willing to cancel the word perpendicular but believes that such amendment is unnecessary in view of the foregoing explanation and the disclosure of original Fig. 1.

Next, claims 6-14 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons noted in the official action. The inadequate written description rejection is acknowledged and respectfully traversed in view of the following remarks.

As previously noted, the four dark lines in the sole Figure represent four grooves G, G', G'', G''' which are formed in the exterior surface of the shifting roll 7. The first groove G, which extends along the right hand side of the sole Figure, is straight except for the top portion of the sole Figure which has about a 45 degree jog to the right (for shifting to a reverse gear); the next, second from the right side, second groove G' in the sole Figure is also straight except for a small somewhat triangular jog to the right (for shifting a first gear) and then a small somewhat triangular jog to the left (for shifting a second gear). The second from the left side, third groove G'' in the sole Figure is also straight except for a small somewhat triangular jog to the right (for shifting a third gear) and then a small somewhat triangular jog to the left (for shifting a fourth gear). The fourth groove G''', extending along the left hand side of the sole Figure, is also straight except for a small somewhat triangular jog to the right (for shifting a fifth gear)—it is to be appreciated that there also could then be a small somewhat triangular jog to the left (for shifting a sixth gear (not shown), if such gear were included as part of the transmission), and so forth for any additional gear(s).

A respective selector finger F, F', F'' or F''' (see the sole Figure in which the selector fingers F, F', F'', F''' are now diagrammatically shown) is located within and mates with the respective groove G, G', G'' or G''' and the respective selector finger F, F', F'' or F''' is guided and controlled by the shape or contour of the respective groove G, G', G'' or G''' and the pivoted orientation of the respective rocker elements 8, about its pivot rotational axis 6, located within the respective grooves G, G', G'' or G''' as the shifting roll 7 rotates in a desired rotational direction.

At least three of the grooves (i.e., the second, third and fourth grooves G', G'', G''') have one or more rocker elements 8 located therein at specific locations for achieving the desired gear shifts. Each rocker element 8 is pivotable, about its respective pivot axis 6, and each respective pivot axis 6 extends generally normal to a longitudinal length of the grooves G', G'', G'''.

Each pivot axis 6 is located off center with respect to the respective rocker element 8 so that the rocker element is supported in a cantilevered fashion. A spring 9 biases the shorter first end (i.e., wedge-shaped tip 10, 11, 12, 13 or 14) of the rocker element 8 radially outward so that the first end or wedge-shaped tip is normally positioned so as to abut with and assist with diverting the respective selector finger F, F', F'' or F''', e.g., to the right or the left depending upon the orientation of the rocker element 8 and the grooves G, G', G'', G''', as the shifting roll 7 rotates.

However, if the shifting roll 7 rotates at a sufficiently high enough rotational speed, the weight of the opposite cantilevered second end of the rocker elements 8, i.e., wedge-shaped tip 1, 2, 3, 4 or 5, overcomes the biasing force of the spring 9 so that the opposite second end, i.e., wedge-shaped tip 1, 2, 3, 4 or 5, of the rocker element 8 pivots radially outward, about the pivot axis 6, while the opposite shorter first end, i.e., wedge-shaped tip 10, 11, 12, 13 or 14, pivots radially inward about the pivot axis 6. As a result of such pivoting movement of the rocker element 8, the opposite second end, i.e., wedge-shaped tip 1, 2, 3, 4 or 5, of the rocker element 8 now is located so as to be able to abut with and assist with diverting the respective selector finger F, F', F'' or F''' as the shifting roll 7 rotates while the shorter first end, i.e., wedge-shaped tip 10, 11, 12, 13 or 14, of the rocker element 8 is no longer located to abut with and divert the respective selector finger F, F', F'' or F'''.

Due to this arrangement, if all of the respective selector fingers F, F', F'', F''' are located adjacent the top of the page and if the shifting roll 7 rotates at a relatively slow speed, in the direction toward the top of the page, the respective selector finger F, F', F'' or F''' will each be guided, downward along the page and along the respective groove G, G', G'' or G''', so that a second selector finger F' (traveling along the second groove G' located second from the right in the sole Figure) successively contacts and is diverted by the respective shorter first end 14 of the first gear rocker element 8 so that the respective second selector finger F' will move along the path outlined by the respective dark groove line shown in the sole Figure and cause engagement of first gear. Further rotation of the shifting roll 7, toward the top of the page about

rotational axis A, will initially disengage the first gear and then the respective second selector finger F' will engage the shorter first end 13 of the second gear rocker element 8 so that the respective second selector finger F' will move along the path outlined by the respective dark groove line shown in the sole Figure to cause engagement of second gear.

Further rotation of the shifting roll 7, toward the top of the page, will successively shift third gear, fourth gear, via the third selector finger F'' traveling along the third groove G'' located second from the left side in the sole Figure. Still further rotation of the shifting roll 7, toward the top of the page, will successively shift fifth gear, and so forth, via the fourth selector finger F''' traveling along the fourth groove G''' located along the left side of the sole Figure.

If, however, all of the respective selector fingers F, F', F'', F''' are located adjacent the top of the page and if the shifting roll 7 rotates at a sufficiently high enough rotational speed, in the direction toward the top of the page, so that the weight of the opposite second end 1, 2, 3, 4 or 5 of the respective rocker elements 8 overcome the biasing force of the spring 9, then the shorter first end 10, 11, 12, 13, 14 of the rocker elements 8 are each pivoted radially inward, about their respective pivot axes 6, so that the shorter first end 10, 11, 12, 13 or 14 of the respective rocker element 8 are no longer able to abut with and divert the respective selector finger F along the path outlined by the respective dark groove line in the sole Figure. As a result of this, the respective selector fingers F, F', F'', F''' each travel along the a straight path shown in dashed lines in the sole Figure, i.e., the small somewhat triangular jog to the left or the right is bypassed and the associated gear shift is "skipped" during such an upshift or a downshift—depending upon the rotational direction of the shifting roll 7.

As previously noted, Fig. 1 now is amended to diagrammatically show the selector fingers F, F', F'', F''' being located within the respective grooves G, G', G'' or G'''. It is respectfully submitted that there is ample support throughout the originally filed specification which shows this arrangement (see paragraphs [0033] - [0036], [0041] and [0045], for example). In addition, as clearly disclosed within the originally filed specification and claims, the wedge-shaped tips form part of the rocker elements which pivot, about the rotational axis 6, so that the wedge-shaped tips of the rocker elements 8 is either located so as to abut with and deflect the associated selector finger F, F', F'' or F''', as the shifting roller 7 rotates, or if the shifting roller 7 is rotated at a sufficiently high enough rotational speed so that the centrifugal force overcomes the spring force 9 and the rocker elements 8 pivot about their rotational axes 6 and compress spring 9, the opposite end of the wedge-shaped tips is then pivoted radially

inwardly so that it is not in a position to engage with and deflect the respective selector fingers F, F', F'' or F'''.

As clearly shown in the drawings, the spring 9 is located between a radially outwardly facing surface of the shifting roller 7 and an undersurface of the rocker element of 8. In order to clarify such arrangement, the sole Figure of drawing is amended to show the springs 9 in dashed lines--to signify that the springs 9 are located beneath the respective rocker elements 8. As a result of such arrangement, the spring 9 is normally a compression spring which biases the first end of the rocker element radially upwardly so that first wedge-shaped tip is in a position to engage with the selector finger F while the opposite second end of the rocker element is pivoted, about rotational axis 6, toward the shifting roll 7 so that the second wedge-shaped tip of the rocker element are normally positioned so that they will not abut and deflect the respective selector finger F, F', F'' or F'''.

With respect to how the neutral groove is bound by the gear stage, the Applicant respectfully points out that the neutral groove is merely the space or distance provided between each adjacent rocker element 8 and labeled with reference letter N. This neutral section of groove merely ensures that one gear is completely disengaged before the next gear is engaged.

In view of the originally filed specification and the above clarification, it is respectfully submitted that one skilled in the art, upon reading the specification, would be able to practice the invention. That is, the specification is enabling for both the structure being claimed as well as the relationship between the structural components of the device. Accordingly, the Applicant respectfully submits that all of the raised rejections, under 35 U.S.C. § 112, first paragraph, be withdrawn at this time.

Next, claims 5-8 (that subject matter now rewritten as new claims 9-14) are rejected, under 35 U.S.C. § 102(b), as being anticipated by Bart '645 (DE 19543645). The Applicant acknowledges and respectfully traverses the raised anticipatory rejection in view of the following remarks.

As previously noted, Bart '645 arguably refers to a gearchange cylinder 10 which is provided with a pattern of groves on the exterior surface thereof. Each groove arguable interacts with control switches to bring about gear shifts. The gearchange sleeve 10 is moved between any two gear settings to operate the synchromesh for the gear ratios. This allows switching between any two gears and is especially used for small engines, such as motorcycles.

It is respectfully submitted that although the gearchange cylinder 10 somewhat resembles the shifting roll, according to the present invention, it is specifically noted that Bart '645 fails to in any way teach, suggest or disclose or remotely hint at the pivotable rocker elements 8, as presently claimed, namely:

(1) a shifting roll rotatably about an axis, and the shifting roll having a plurality of grooves formed in a surface thereof;

(2) a respective selector finger engaging with each one of the plurality of grooves, and each one of the respective selector fingers being guided by the respective groove as the shifting roll rotates;

(3) at least one of the plurality of grooves has a two spaced apart rocker elements located therein, and each of the rocker elements is located within the respective groove for diverting the respective selector finger as the shifting roller rotates, each rocker element is pivotably supported within the respective groove, each opposed end of the rocker elements has opposed first and second wedge-shaped tips (1, 2, 3, 4, 5 or 10, 11, 12, 13, 14) for engaging and diverting the respective selector finger, and a respective spring (9) biasing the first wedge-shaped tip (10, 11, 12, 13, 14) of the rocker element radially outward, about the pivot axis, and simultaneously biasing the opposite second wedge-shaped tip (1, 2, 3, 4, 5) radially inward so that the shift device is a passive, speed of rotation regulated system, and a choice of a desired gear stage for upshifting as well as downshifting is achieved as a function of a speed of rotation of the shifting roll relative to centrifugal force and a position of the rocker elements, as presently claimed.

Claims 6-8 are then rejected, under 35 U.S.C. § 102(e), as being anticipated by Bart '645 Bigi '319 (U.S. Publication No. 2003/0213319). The Applicant acknowledges and respectfully traverses the raised anticipatory rejection in view of the following remarks.

In view of the above requested cancellation of claims 6-8, the Applicant respectfully submits that further comments concerning the applied prior art of Bigi '319 is not believed necessary.

The Applicant also notes the remaining prior art cited in the official action. As none of that additional art is applied by the Examiner against the claims of this application, the Applicant is not providing any comments concerning that art as well.

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If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejection(s) should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the Bart '645 and/or Bigi '319 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,



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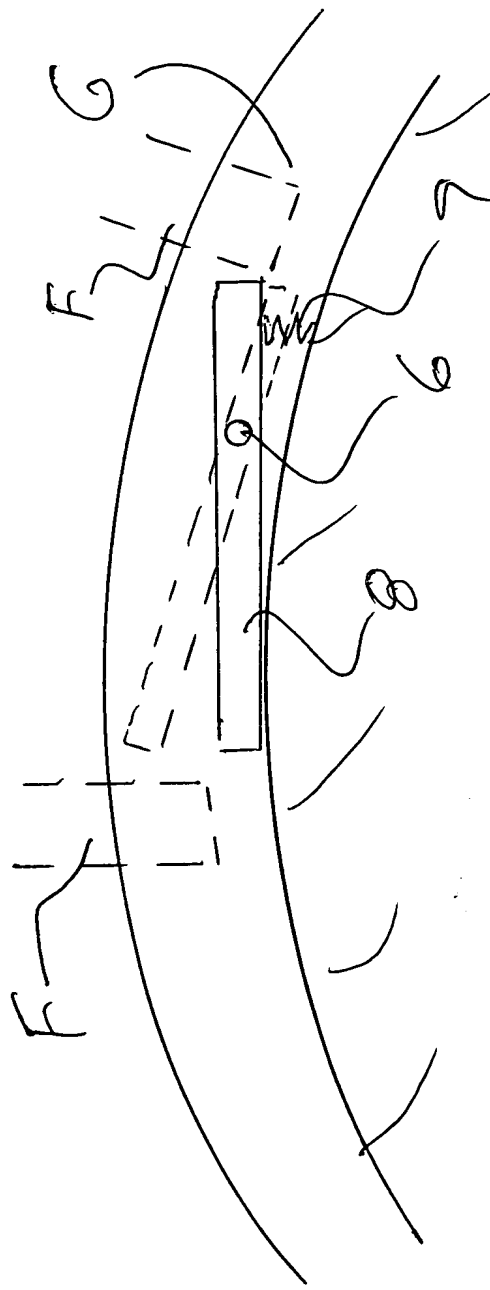
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7

Exhibit A

Fig. 1 Exploded

